

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

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# PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) **28-06-2005**

Applicant's or agent's file reference  
**P9220PC**

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
**PCT/SE2005/000425**

International filing date (day/month/year)  
**23.03.2005**

Priority date (day/month/year)  
**25.03.2004**

International Patent Classification (IPC) or both national classification and IPC  
**B01D 15/00, B01J 20/04, C07C 29/76, C12P 7/06**

Applicant  
**Globelive International AB et al**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further opinions, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/SE2005/000425

**Box No. I      Basis of this opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language, \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format  
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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**Box No. V** Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>2, 4-5</u>	YES
	Claims	<u>1, 3</u>	NO
Inventive step (IS)	Claims	<u>2</u>	YES
	Claims	<u>1, 3-5</u>	NO
Industrial applicability (IA)	Claims	<u>1-5</u>	YES
	Claims	<u></u>	NO

2. Citations and explanations:

Reference is made to the following documents:

- D1) DD-274 362-A1
- D2) US 5 427 689-A
- D3) US-5 421 860-A
- D4) US-4 492 637-A

The present invention relates to a process for extraction of high-grade ethanol from a low-grade solution, such as a mash. One object of the invention is to overcome high costs for the extraction by reducing the high consumption of energy. Another object is to provide a one-step process.

D1 (p.1, line 1-p.2, line 47) describes separation of ethanol from a solution of ethanol/water. Ethanol is adsorbed in, for example, a column of metal silicate (i.e. a sort of salt). The ethanol is subsequently released from the column by heating. Thus, energy consuming processes, such as distillation, is avoided in this process.

D2 (col.2, line 54-col.5, line 10) reveals separating polar substances, such as ethanol, from hydrocarbon fluids by adsorbing the polar substance with a borate of aluminium and zirconium (i.e. a sort of salt). The absorbed compound can be removed from the borate by heating.

D3 (col.2, line 64-col.3, line 68 and claims 1, 6 and 7)

.../...

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

reveals sorption of organic materials, such as alcohols, on beads of a material that contains, for example aluminium phosphate.

Claims 1,3

The process in claims 1 and 3 does not differ from what is disclosed in D1 by the broadly formulated expression: "salt" in claim 1, (cf. also Box VIII of this written opinion). Hence, the subject matter of claims 1 and 3 is not novel.

Claims 4-5

The embodiments according to the characterising parts of claims 4-5 are considered obvious for a person skilled in this technical field. Concerning claim 4, refer to, for example, D4 (col.1, lines 1-27).

Further documents of particular relevance

In further view of D2 or D3, the invention according to claims 1 and 3-5 is not considered to define an invention that fulfils the requirements of novelty and inventive step.

Concerning observations in the claims, see Box VIII.

WRITTEN OPINION OF THE  
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**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawing or on the question whether the claim are fully supported by the description, are made:

According to PCT Article 6, the claim or claims shall define the matter for which protection is sought. Claims shall be clear and concise. They shall be fully supported by the description.

Claim 1

Claim 1 is vaguely and broadly defined in view of the technical support in the description. Claim 1 does not contain all the features considered necessary to define the invention in accordance with the aim of the invention and the result to be achieved by the invention (cf. first paragraph of Box V).

According to the description p.2, lines 15-17, an important feature of the invention is that the initial low-grade solution (mash) is brought into contact with a bed of particles of a specific salt, namely  $Mg_3(PO_4)_2$ , cf. also the abstract, line 5 and claim 2).

The expression: "from a solution" in claim 1 is unclear. What solution? According to the title and the description p.1, lines 7-18, the solution contains water.

Terminology

In claims 3-5: "ethanol" has been named: "ethyl-alcohol". Why using another terminology for the same substance?